

WHAT IS CLAIMED IS:

1. A control device in a hybrid compressor that is within a refrigerating cycle and driven by one of an engine and an electric motor, the hybrid compressor whose compression mechanism is driven by rotation of a swash plate, the swash plate whose inclination angle is varied by capacity controlling means that is externally controlled, the control device comprising:

first controlling means for operating the hybrid compressor by setting the capacity controlling means to a first control value to thereby trigger the swash plate to be rapidly inclined when the hybrid compressor starts being driven by the electric motor; and

second controlling means for operating the hybrid compressor by setting the capacity controlling means to a second control value after the first controlling means operates the hybrid compressor,

wherein the first control value is greater than the second control value that is obtained from a status of the refrigerating cycle.

2. A control device in a hybrid compressor that is within a refrigerating cycle and driven by one of an engine and an electric motor, the hybrid compressor whose compression mechanism is driven by rotation of a swash plate, the swash plate whose inclination angle is varied by capacity controlling means that is externally controlled, the control device

comprising:

first controlling means for operating the hybrid compressor by driving the electric motor at a first revolution number to thereby trigger the swash plate to be rapidly inclined when the hybrid compressor starts being driven by the electric motor; and

second controlling means for operating the hybrid compressor by driving the electric motor at a second revolution number after the first controlling means operates the hybrid compressor,

wherein the first revolution number is greater than the second revolution number.

3. The control device according to Claim 1, further comprising:

pressure detecting means for detecting refrigerant pressure in a higher portion of the refrigerating cycle,

wherein the first control value varies according to the refrigerant pressure detected by the pressure detecting means.

4. The control device according to Claim 2, further comprising:

pressure detecting means for detecting refrigerant pressure in a higher portion of the refrigerating cycle,

wherein the first revolution number varies according to the refrigerant pressure detected by the pressure detecting means.

5. The control device according to Claim 1 or 2,

wherein the first controlling means operates the hybrid compressor for a certain period after the hybrid compressor starts being driven by the electric motor.

6. The control device according to Claim 1, further comprising:

revolution number detecting means for detecting a revolution number of the electric motor,

wherein the first controlling means operates the hybrid compressor till the revolution number detecting means detects a certain decrease, after the hybrid compressor starts being driven by the electric motor, in the revolution number of the electric motor.

7. The control device according to Claim 1, further comprising:

electric current detecting means for detecting an electric current of the electric motor,

wherein the first controlling means operates the hybrid compressor till the electric current detecting means detects a given decrease, after the hybrid compressor starts being driven by the electric motor, in the electric current of the electric motor.

8. The control device according to Claim 1 or 2, further comprising:

air temperature detecting means for detecting a temperature of an air just after the air passes through an evaporator within the refrigerating cycle,

wherein the first controlling means operates the hybrid compressor till the air temperature detecting means detects a temperature at which the detected temperature that has been increasing since the hybrid compressor started being driven by the electric motor starts decreasing.

9. The control device according to Claim 1, further comprising:

third controlling means for operating the hybrid compressor for a given period after the first controlling means operates the hybrid compressor and before the second controlling means operates the hybrid compressor,

wherein the third controlling means operates the hybrid compressor by setting the capacity controlling means at a variable control value that converges, for the given period, from the first control value to the second control value.

10. The control device according to Claim 2, further comprising:

third controlling means for operating the hybrid compressor for a given period after the first controlling means operates the hybrid compressor and before the second controlling

means operates the hybrid compressor,

wherein the third controlling means operates the hybrid compressor by driving the electric motor at a variable revolution number that converges, for the given period, from the first revolution number to the second revolution number.

11. A hybrid compressor that is within a refrigerating cycle and driven by one of an engine and an electric motor, comprising:

a swash plate rotated by being driven by one of the engine and the electric motor;

a compression mechanism driven by rotation of the swash plate;

capacity controlling means that is externally controlled and varies an inclination angle of the swash plate; and

a control device,

wherein the control device includes:

first controlling means for operating the compression mechanism by setting the capacity controlling means to a first control value to thereby trigger the swash plate to be rapidly inclined when the compression mechanism starts being driven by the electric motor; and

second controlling means for operating the compression mechanism by setting the capacity controlling means to a second control value after the first controlling means operates the compression mechanism,

wherein the first control value is greater than the

second control value that is obtained from a status of the refrigerating cycle.

12. A hybrid compressor that is within a refrigerating cycle and driven by one of an engine and an electric motor, comprising:

a swash plate rotated by being driven by one of the engine and the electric motor;

a compression mechanism driven by rotation of the swash plate;

capacity controlling means that is externally controlled and varies an inclination angle of the swash plate; and

a control device,

wherein the control device includes:

first controlling means for operating the compression mechanism by driving the electric motor at a first revolution number to thereby trigger the swash plate to be rapidly inclined when the compression mechanism starts being driven by the electric motor; and

second controlling means for operating the compression mechanism by driving the electric motor at a second revolution number after the first controlling means operates the compression mechanism,

wherein the first revolution number is greater than the second revolution number.

13. A control device in a hybrid compressor that is within a refrigerating cycle and driven by one of an engine and an electric motor, the hybrid compressor whose compression mechanism is driven by rotation of a swash plate, the swash plate whose inclination angle is varied by a capacity control valve that is externally controlled, the control device comprising:

first controlling means that operates the hybrid compressor by controlling a control device for operating at a first control value to thereby trigger the swash plate to be rapidly inclined when the hybrid compressor starts being driven by the electric motor; and

second controlling means that operates the hybrid compressor by controlling the control device for operating at a second control value after the first controlling means operates the hybrid compressor,

wherein the first control value is greater than the second control value that is obtained from a status of the refrigerating cycle.

14. The control device according to Claim 13,

wherein the control device includes the capacity control valve, and

wherein the first control value includes a first electric current applied to the capacity control valve while the second control value includes a second electric current applied to the capacity control valve.

15. The control device according to Claim 13,  
wherein the control device includes the electric motor,  
and

wherein the first control value includes a first  
revolution number of the electric motor while the second control  
value includes a second revolution number of the electric motor.